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received from John 4/8/08

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Div. of Oil, Gas & Mining

Ms. Mary Ann Wright
Associate Director, Mining
Division of Oil, Gas and Mining
Utah Department of Natural Resources
1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801

Subject: Response to September 17, 2007 Division of Oil, Gas and Mining Inspection of the Code 22 Waste Rock Disposal Area, Permit No. M/035/002

Dear Ms. Wright,

On January 24, 2007 KUC submitted plans, maps and a completed form MR-REV in relation to placement of the Code 22 waste rock disposal area. On February 9, 2007, Division staff (Beth Erickson and Tom Munson) met with KUC representatives to review those plans and complete an inspection the proposed Code 22 disposal area area. During the on site inspection, KUC explained in some detail the location of the ultimate disposal area toe, extent of the final re-graded slope, total tonnage, as well as designed setbacks for ease of re-grading into a natural looking landform. KUC and Division staff also discussed salvaging any available topsoil prior to placement of the disposal area. Due to the visible outcropping of bedrock, KUC explained that all available soil would be salvaged, but that the amount would be very limited. At the end of the meeting, KUC received verbal approval from the UDOGM staff for the project.

On September 13, 2007 Beth Erickson completed a second inspection of the Code 22 waste rock disposal area and submitted an inspection report to KUC dated September 17, 2007. KUC subsequently had a discussion with Ms. Erickson on January 31, 2008 to review the inspection report. During that conversation Ms. Erickson requested the following information:

- Discussion on why Code 22 did not contribute to the July 27, 2007 event.
- Current summary of existing waste rock disposal area monitoring and inspection practice.
- Summary of the geotechnical assessment and design of Code 22 waste rock disposal area prior to placement.

Impacts from Code 22 on the July 27, 2007 Event

On September 13, 2007 Ms. Erickson, Ms. White accompanied KUC employees for an inspection of the Code 22 waste rock disposal area. The following was observed at Code 22 on that day:

- The berm on the outer edge of the disposal area was 6-7 feet high and at least 12-14 feet wide at the base.
- The berm was intact and well maintained.
- No visible settlement at the crest or cracks near the berm.
- No visible evidence of storm water erosion from the crest, berm or slopes of Code 22.
- No visible evidence of erosion rills and gullies on the face of the disposal area slope.
- No visible evidence of sediment washed out from the toe of Code 22 and into the Yosemite drainage.
- There was no evidence that surface water overtopped the disposal area edge, causing concentrated flow from the crest.
- Dump crest material was solid and not spongy, indicating no saturation.

Based on the field observations, it was evident that the July 27, 2007 storm event had little or no impact on Code 22 nor did Code 22 contribute to the event. In addition, Code 22 is a new waste rock disposal area and has not yet oxidized so the disposed material is grey in color. Waste rock and sediment from the Yosemite waste rock disposal area has been in place for over thirty years and is oxidized as evident by the yellow-brown color. All sediment observed and excavated from the Yosemite drainage both on and off site was yellow-brown in color, further evidence that the material originated from the Yosemite waste rock disposal area and not Code 22.

KUC's Waste Rock Disposal Area Monitoring and Inspection Practices

KUC's current waste rock disposal area inspection and monitoring practices involve the following:

<u>Mine Operations (Mine SOP MNSOP115P-0001)</u>

- All active waste rock disposal area are surveyed weekly by mine survey personnel and the survey data is reviewed by Mine Planning and Geotechnical engineers.
- Prior to the start of work, dozer operators are to complete a pre-inspection of the disposal area to look for settlement or cracks next to the berm.
- If settlement or cracks are visible the operator will look over the disposal area to investigate the cause (i.e. a bulge in the waste rock area or pulling at the toe).
- If settlement/cracks are visible the operator will doze down the crest material and re-establish the berm.
- The operator inspects berms to ensure a height of at least 6-7 feet and 12-14 feet wide at the base. If the berm does not meet the standard, then repair or build a new berm by working the waste rock disposal area parallel to the berm.
- An additional quarterly documented waste rock area inspection is performed by mine operations personnel.

Mine Geotechnical Department

- The geotechnical department regularly inspects all active waste rock disposal areas during and post placement for safety and stability.
- There is no active instrumentation on the active pit perimeter waste rock disposal areas.
- The Eastside and South end inactive waste rock disposal areas are surveyed quarterly using GPS monuments to monitor waste rock displacement.
    - The surveys are conducted on twelve established control points (survey monuments) on a quarterly basis using a screw-top antenna and a static GPS to determine deformation potential and movement of the waste rock disposal areas.
    - Survey monuments are grouted in place to a depth of 16 feet, with a 4-foot stick-up.
- The waste rock disposal areas are largely unsaturated and free draining to ensure the most stable configuration. It is necessary to note that pore pressure is measured only at selected sites at the Sap, Zelnora, Cottonwood, and Markham waste rock disposal areas. Active waste rock disposal areas and the Eastside and South end inactive waste rock disposal areas do not have piezometer monitoring wells in place within the waste rock mass.

Tailings and Water Service

- Tailings Operations completes quarterly visual inspections of the South End and Eastside waste rock disposal areas for indications of large-scale erosion, channeling and signs of slope deformation.
- Inspections are documented on the quarterly inspection route sheets at South Area Water Services.

Code 22 Waste Rock Disposal Area Geotechnical Assessment and Design

Waste rock disposal areas at KUC are engineered facilities, designed by mining and geotechnical engineers as safe and stable structures as per the following:

- Prior to construction of a waste rock disposal area, the mine Geotechnical Department reviews a disposal area plan in consultation with the Environmental Department as appropriate.
- Mine Operations construct the waste rock disposal area based on the approved waste rock disposal area plan.
- Mine Operations compacts each waste rock lift through haul truck traffic.
- Mine operations inspect and maintain waste rock disposal area crests and berms.
- Newly constructed waste rock disposal area heights do not exceed 1000 feet.
- All new waste rock disposal areas are constructed with adequate set-backs for ease of re-grading to a minimum of 2.5:1.
- The rate of advance of a waste rock disposal area is controlled to prevent sliver failures from occurring and allow adequate depressurization of the waste rock disposal area foundation material.
- The mine Geotechnical Department inspects the waste rock disposal area during construction and post placement for safety and stability.

There are no known foundation instability issues on record for the Code 22 waste rock disposal area. An assessment of area prior to waste rock placement as well as aerial photographs prior to 2007 showed no evidence of slumping or surface seeps. Prior to placement of the Code 22 waste rock, the area underwent a geotechnical assessment to ensure the foundation conditions technically acceptable. KUC's geotechnical engineers believed there was minimal risk of a foundation failure for Code 22 and approved the waste rock disposal area design based on the following reasons:

- The underlying rock is competent quartzite bedrock.
- Numerous visible quartzite bedrock outcroppings will act as anchor points.
- A mapping exercise in plan and section showed no evidence of underground workings located beneath the proposed waste rock disposal area foundation.
- Topsoil and all unconsolidated material will be stripped from the footprint of the dump, thereby eliminating a low-strength surface layer.
- The waste rock disposal area will be constructed on a hillside sloping between 22 and 28 degrees.
- The waste rock disposal area is to be constructed at a 2.5:1 angle, that will subsequently be re-graded and cross ripped along the contour.
- The waste rock disposal area will be tied into the canyon wall and existing waste rock disposal areas on the north and south sides, which will act as anchor points.
- The advance rate of waste rock placement will be controlled, similar to current practice at Code 35 and Code 40 waste rock disposal areas, which will minimize the likelihood of sliver failures occurring on the outside crest of the waste rock disposal area during construction. Compliance with Mine SOP MNSOP115P-0001, which includes a pre-shift inspection of the waste rock disposal area crest for settling and tension cracks, will further ensure safe construction of the dump.

If you have any questions about this correspondence, please call me at 569-6000 or Chris Kaiser at 569-7427.

Sincerely,

R. McGowan Jackson

Rohan McGowan-Jackson
General Manager, HSEQ

Attachments